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10/675,529

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Jerrell Hein

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EXAMINER

FRANKLIN, RICHARD B

ART UNIT

PAPER NUMBER

2181

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DELIVERY MODE

06/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/675,529	<b>Applicant(s)</b> HEIN, JERRELL	
	<b>Examiner</b> RICHARD FRANKLIN	<b>Art Unit</b> 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-11,13-20,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-11,13-20,22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. Claims 1 – 3, 5 – 11, 13 – 20, and 22 – 23 are pending.

***Reopening of Prosecution After Appeal Brief***

2. In view of the Appeal Brief filed on 21 March 2008, PROSECUTION IS  
HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below: /Alford W. Kindred/

Supervisory Patent Examiner, Art Unit 2163

***Response to Arguments***

2. Applicant's arguments filed 28 November 2007 have been fully considered but they are not persuasive.

**Ground I:**

**Claims 1-3 and 5-9**

Applicant has failed to identify any claimed limitation that is not met by one of the prior art references.

In response to applicant's argument that the proposed combination is not a predictable use of the input terminal of Spenea according to its established function of providing a power supply signal, the Examiner submits that the function of the input terminal of Spenea is not relied upon. Only the permanent conversion from one mode of operation to another mode of operation of Spenea is relied upon.

In response to applicant's argument that the current that is used to blow the fuse of Spenea fails to teach or suggest a communication received over a terminal to convert the terminal to a second mode of operation, the Examiner submits that the applicant has not defined the term "communication" so as to exclude a current received over a terminal, as taught by Spenea.

**Claim 22**

In response to applicant's argument that Spenea fails to teach or suggest that PIN C is not operable as an input pin until the trimming circuit is locked, the Examiner submits that Spenea teaches that the terminal is only operable in the second mode after

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the fuse has been blown. Spenea teaches that PIN B of Figure 3 can be used after the fuse is blown for the main function for which it was intended (Spenea; Col 4 Line 66 – Col 5 Line 2).

**Claim 11, 13, 16-18, 23**

Applicant makes the same argument as presented with respect to "Claims 1-3 and 5-9" above.

**Claims 14 and 15**

Applicant makes the same argument as presented with respect to "Claims 1-3 and 5-9" above.

**Claims 19 and 20**

Applicant makes the same argument as presented with respect to "Claims 1-3 and 5-9" above.

**Ground II:**

Applicant has failed to identify any claimed limitation that is not met by one of the prior art references.

In response to applicant's argument that the proposed combination is not a predictable use of the input terminal of Spenea according to its established function of providing a power supply signal, the Examiner submits that the function of the input

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terminal of Spenea is not relied upon. Only the permanent conversion from one mode of operation to another mode of operation of Spenea is relied upon.

In response to applicant's argument that Hauck does not teach or suggest that pin 120 receives serial communications required by claim 10 and that Torode teaches away from combination with Hauck, the Examiner submits that Torode only teaches an embodiment that does not have a dedicated programming pin. Torode does not teach that a dedicated programming pin undesirable for a specific reason, and only teaches that such a pin is not required. Therefore, there is no teaching 'away from a dedicated programming pin. Also, Torode teaches wherein a programming pin can receive serial communications and a calibration clock. This teaching in combination with the dedicated programming pin of Hauck teaches the dedicated programming pin as claimed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 3, 5 – 9, 11, 13 – 20, and 22 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenea).

As per claims 1 and 19, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode and wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables

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the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

As per claim 2, Spenea also teaches wherein once the terminal is converted to the second mode of operation, the first mode of operation for the terminal is permanently disabled (Spenea; Col 1 Lines 14 – 19).

As per claims 3, 13, and 20, Torode also teaches wherein a terminal configuration determining the mode of operation of the terminal is stored in a non-volatile memory (Torode; Figure 7 Item 740, Col 6 Lines 56 – 60).

As per claims 5 and 15, Torode also teaches wherein the serial communication received over the terminal in the first mode includes a command and write data (Torode; Figure 9, Col 7 Lines 10 – 13).



As per claims 6 and 16, Torode also teaches wherein the control logic distinguishes between a calibration clock and a serial communication received on the terminal (Torode; Col 8 Lines 11 – 13).

As per claims 7 and 17, Torode also teaches wherein the output enable function is for controlling the output of one or more clocks according to the voltage value of the terminal (Torode; Col 3 Lines 26 – 31).

As per claim 8, Torode also teaches wherein a controllable oscillator is coupled to receive a reference frequency and to supply a clock signal that is coupled to an output terminal that is controlled by the output enable terminal (Torode; Col 5 Lines 23 – 33); and a resonating device coupled to supply the reference frequency (Torode; Figures 2 – 4 Item 220).

As per claim 9, Torode also teaches wherein the terminal is on a package (Torode; Figure 1 Item 100, Col 2 Line 64 – Col 3 Line 25), the package including an integrated circuit (Torode; Figure 2 Item 210) and a resonating device (Torode; Figures 2 – 4 Item 220), the integrated circuit including the controllable oscillator (Torode; Figure 5 Item 560), and the resonating device being a crystal device (Torode; Figures 2 – 4 Item 220, Col 3 Lines 38 – 51).

As per claim 11, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation parameters of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode and wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

As per claim 14, Torode also teaches wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation (Torode; Col 4 Lines 15 – 19).

As per claim 18, Torode also teaches wherein the terminal is on a package, the package including an integrated circuit and a resonating device, the resonating device being one of a crystal device (Torode; Figure 1 Item 100).

As per claims 22 and 23, Spenea also teaches that converting from the first mode to the second mode is a part of a locking function (Spenea; Col 1 Lines 14 – 19). The locking function includes permanently disabling the first mode of operation (Spenea; Col 1 Lines 14 – 19) and therefore teaches that the second mode of operation is not accessible without permanently disabling the first mode of operation.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenea) and further in view of US Patent No. 6,670,852 (hereinafter Hauck).

As per claim 10, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines

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15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31). Torode also teaches wherein a terminal receives serial communications and a calibration clock (Torode; Col 8 Lines 17 – 20).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenea teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenea; Col 1 Lines 14 – 19). The locking is performed by receiving a current over the terminal and blowing a fuse in response to the current (Spenea; Col 3 Lines 56 – 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenea; Col 1 Lines 14 – 19).

Torode in combination with Spenea does not teach wherein the apparatus comprises a second terminal that functions as a dedicated programmable input/output terminal.

However, Hauck teaches a programmable crystal oscillator with a dedicated programming input terminal (Hauck; Figure 2 Item 120) that does not get converted into an output enable terminal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode in combination with Spenea to include the dedicated programming terminal because it allows for in-system tuning of the crystal oscillator by the user (Hauck; Col 6 Lines 15 – 16).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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